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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|--|-------------|----------------------|-----------------------|------------------|
| 10/848,747 | 05/19/2004 | Henry M. Hodgens | EH-10675 (02-411-US2) | 4646 |
| 34704 | 7590 | 07/30/2004 | EXAMINER | |
| BACHMAN & LAPOINTE, P.C. 900 CHAPEL STREET SUITE 1201 NEW HAVEN, CT 06510 | | | SAVAGE, JASON L | |
| | | | ART UNIT | PAPER NUMBER |
| | | | 1775 | |

DATE MAILED: 07/30/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

| | | | |
|------------------------------|------------------------|---------------------|--|
| Office Action Summary | Application No. | Applicant(s) | |
| | 10/848,747 | HODGENS ET AL. | |
| | Examiner | Art Unit | |
| | Jason L. Savage | 1775 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19,21-24,26 and 27 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 19, 21-24, 26-27 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 19 May 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date ____ | 6) <input type="checkbox"/> Other: ____ |

Drawings

The drawings are objected to because In figure 1, Applicant labels the Ni layer as **16** and the surface of the substrate layer to which the Ni layer is bonded as **14**, however in the specification on page 3, lines 9-10, the Ni layer is defined as **14** and the surface of the substrate layer is designated as **16**. Either the reference numbers in the drawings or the specifications need to be changed so they match.

In Figure 4 Applicant also did not label the middle layer prior to the diffusion step. This middle layer should be labeled >Ni or Ni alloy= just as it was in Figure 1.

A proposed drawing correction or corrected drawings are required in reply to the Office action to avoid abandonment of the application. The objection to the drawings will not be held in abeyance.

It was noted that in the preliminary amendment filed 5-19-04 that an amended figure 4 was to be submitted however it appears that no such amended drawing was included with the amendment.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 19 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Usui (US 5,246,786).

Art Unit: 1775

Usui teaches a method of forming a coating on a steel substrate having an electroplated nickel base coating, an electroplated zinc coating on the nickel base and diffusing the zinc into the nickel base (col. 1, ln. 54 – col. 2, ln. 13).

Regarding the limitation that the substrate be low carbon steel, it would have been obvious to one of ordinary skill in the art at the time of the invention to have used any known steel material as the substrate of Usui, including low carbon steel, with the expectation of success.

Claims 21-23 and 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Usui (US 5,246,786) as applied to claims 19 and 23 above in view of Clark (US 5,595,831).

Usui teaches what is set forth above, but it is silent to the coated structure being used as a turbine or being heat and corrosion resistant 900°F. Usui does teach that the coated product is suitable in high temperature environments (col. 2, ln. 14-17). Clark teaches that a steel turbine component coated with a nickel layer and an outer nickel/zinc layer provides the turbine with corrosion protection (col. 1, ln. 51 – col. 2, ln. 6). It would have been obvious to one of ordinary skill in the art at the time of the invention to have used the diffused nickel/zinc coating of Usui on a turbine component since the coating could provide corrosion resistance in high temperature environments. It is the position of the Examiner that the teaching of a coating being suitable for use on a turbine would also be a teaching that the coating has corrosion and heat resistance at particularly high temperatures such as the temperature claimed in claim 22.

Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Usui (US 5,246,786) as applied to claims 19 and 23 above in view of Odashima et al. (US 6,040,054).

Usui teaches what is set forth above however it is silent to the nickel layer being an alloy of the claimed materials. However, it is the position of the Examiner that forming the nickel layer of an alloy, particularly a nickel cobalt alloy, is known. As evidence, Odashima teaches that alloyed corrosion resistant plated steel sheets having coating of Zn-Ni-Co are known (col. 1, ln. 19-29). It would have been obvious to one of ordinary skill in the art at the time of the invention to have formed the coating layers from alloys, such as a nickel cobalt alloy since they are known to provide suitable corrosion resistance.

Claims 19, 21-23 and 26-27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Brill-Edwards (US 3,808,031).

Brill-Edwards teaches a method of forming a coating on a steel substrate having an electroplated nickel base coating, forming a zinc coating on the nickel base and diffusing the zinc into the nickel base (col. 7, ln. 53-60).

Regarding the limitation that the substrate be low carbon steel, it would have been obvious to one of ordinary skill in the art at the time of the invention to have used any known steel material as the substrate of Brill-Edwards, including low carbon steel, with the expectation of success.

Regarding claims 21-22 and 26-27, Brill-Edwards teaches that jet aircraft engines have a need for corrosion resistance. It would have been obvious to one of ordinary skill in the art at the time of the invention to have used the coating of Brill-Edwards on a turbine engine to provide the turbine with suitable corrosion-resistance. It is the position of the Examiner that the teaching of a coating being suitable for use on a turbine would also be a teaching that the coating has corrosion and heat resistance at particularly high temperatures such as the temperature claimed in claim 22.

Claim 24 is rejected under 35 U.S.C. 103(a) as being unpatentable over Usui (US 5,246,786) as applied to claims 19, 21-23 and 26-27 above in view of Brill-Edwards (US 3,808,031).


Brill-Edwards teaches what is set forth above however it is silent to the nickel layer being an alloy of the claimed materials. However, it is the position of the Examiner that forming the nickel layer of an alloy, particularly a nickel cobalt alloy, is known. As evidence, Odashima teaches that alloyed corrosion resistant plated steel sheets having coating of Zn-Ni-Co are known (col. 1, ln. 19-29). It would have been obvious to one of ordinary skill in the art at the time of the invention to have formed the coating layers from alloys, such as a nickel cobalt alloy since they are known to provide suitable corrosion resistance.


Art Unit: 1775

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason L Savage whose telephone number is 571-272-1542. The examiner can normally be reached on M-F 6:30-4:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on 571-272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Jason Savage
7-23-04


DEBORAH JONES
SUPERVISORY PATENT EXAMINER